Proceedings of SC13

The International Conference for High Performance Computing, Networking, Storage and Analysis

Denver, Colorado – 17-22 November 2013

Introduction

HPC is everywhere - everyday. That's the tag line of this year's conference on high performance computing, networking, storage, and analysis (SC), and this volume, containing the accepted technical papers and Gordon Bell prize finalists, captures the best current research in all aspects of HPC.

As in past years, SC has an exceptionally strong technical program, with a rigorous review process. This year, 456 papers were submitted to the technical papers track, with 90 accepted, for an acceptance rate of just under 20%. A review committee of 239 provided between 4 and 6 reviews for most papers, and a rebuttal phase was provided to the authors. Nearly all of the review committee (95%!) met in person for two days in Denver to make the final choices; with over 220 present, this program committee was as large as many technical meetings!

The exceptional quality of the technical papers at SC was recognized with the first Test of Time" Award, presented to William Pugh for his paper, "The Omega Test, a fast and practical integer programming algorithm for dependence analysis," which appeared in the proceedings of SC91. SC also had the honor to be the venue for four major awards: the IEEE-CS Seymour Cray Computer Engineering Award, IEEE-CS Sidney Fernbach Memorial Award, ACM/IEEE-CS Ken Kennedy Award, and for the first time, ACM-W Athena Lecturer Award. The recipients of these awards select the conference at which the award is presented, and SC is honored to be recognized by these leaders as the meeting for their award.

While the technical papers are in many ways the core of the technical program, there are many other important elements in the technical program. While SC has always had a review process for the other elements of the technical program, this year we made a point to extend rigorous peer review to all aspects of the technical program. Our posters, scientific visualization showcase, tutorials, panels, birds of a feature, and workshops all had peer review committees, as did our new "emerging technologies" track. Beginning this year, the SC conference series is archiving material, such as the poster submissions, at the conference web site for each year; see http://sc13.supercomputing.org for more information.

Because workshops at SC are really separate meetings that take advantage of the logistical support and advantages of co-location with SC, this year we made (with peer review) decisions on which workshops to accept much earlier to give the selected workshops more time in which to perform their own peer review for their papers. Workshops make their own arrangements for publishing their papers; some have earned special collaboration status with SIGHPC and will be found in the ACM digital library (look for the specific workshop); others may be found on the SC conference web pages.

Of course, one of the strengths of SC is its unique combination of an exceptionally strong technical program, a vibrant exhibit floor with a balance of industry and research booths, and SCinet, which every year provides researchers with the opportunity to conduct experiments utilizing state-of-the-art networking equipment as well as wide-area network access at

unprecedented rates. As of this writing, we expect to provide at least 700 Gb/s and possibly in excess of 1 Tb/s of bandwidth. The SCinet Network Research Exhibition, new for SC13, provides a peer reviewed opportunity to perform experiments possible nowhere else. Check out the conference web site for more information.

Finally, SC depends on many people for its success. SC is sponsored by the Association for Computing Machinery (ACM) and the IEEE Computer Society, whose long term support has been vital for the continuing success of this conference. SC is run by a committee of volunteers, most of whom have full time jobs in addition to their committee responsibilities, and who have donated their time and energy to the conference. In many cases, their employers have supported the participation of the volunteers, and the SC conference is thankful for their support. Other organizations donate both time and materials, particularly for SCinet, without which SC would not be the best HPC conference in the world. The entire HPC community owes a debt of gratitude to everyone who has made SC, and this proceedings, possible.

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